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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/608,964

06/30/2000

Kiwamu Takehisa

VX002160

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03/12/2003

VARNDELL & VARNDELL, PLLC  
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ALEXANDRIA, VA 22314

EXAMINER

DIAZ, JOSE R

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 03/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/608,964

Applicant(s)

TAKEHISA ET AL.

Examiner

José R Diaz

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2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

➤ The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

➤ Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gong et al. (US Patent No. 6,240,117 B1) in view of Basting et al. (US Pat. No. 6,154,470).

Regarding claim 1, Gong et al. teach a fluorine laser (see cols. 1-12) comprising: a laser chamber (see Figs 4-5 and 8-9) which is filled with a laser gas including fluorine (see Abstract and col. 1, lines 14-35) and to which a predetermined discharge voltage is applied between a cathode (4) and an anode (4) thereof for causing a fluorine laser to oscillate laser light to be supplied as an exposure light source of an exposure apparatus

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(see Figs. 4-5 and 8-9), wherein the pressure of said laser is set equal to or lower than a predetermined value such that a bandwidth of laser light oscillated by said laser chamber is narrowed to a desired value (see Fig. 7). However, Gong et al. fail to teach the limitation of setting the total pressure to or lower than a predetermined value. Basting et al. teach that is well known in the art to set the total pressure of the laser gas to a predetermined value such that a bandwidth of laser light oscillated by said laser chamber is narrowed to a desired value (see col. 1, lines 13-15 and col. 2, lines 30-35). Therefore, it would have been obvious to one having ordinary skill in the art at the same time the invention was made to modify Gong et al. to include the limitation of wherein the total pressure of said laser is set equal to or lower than a predetermined value such that a bandwidth of laser light oscillated by said laser chamber is narrowed to a desired value. The ordinary artisan would have been motivated to modify Gong et al. in the manner described above for at least the purpose of providing an F<sub>2</sub>-laser having enhanced efficiency.

Regarding claim 2, Gong et al. teach that the bandwidth is narrowed to less than about 0.6 pm (see Fig. 7).

Regarding claim 3, Gong et al. fail to teach that the total pressure of said laser gas is set equal to or lower than 1 atm. Basting et al. teach that is well known in the art to set the total pressure of the laser gas to 1 atm or less. (see col. 2, lines 30-35). Therefore, it would have been obvious to one having ordinary skill in the art at the same time the invention was made to modify Gong et al. to include the limitation of wherein the total pressure of said laser is set equal to or lower than 1 atm. The ordinary artisan

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would have been motivated to modify Gong et al. in the manner described above for at least the purpose of providing an F<sub>2</sub>-laser having enhanced efficiency. (see Fig. 7).

Regarding claim 4 Gong et al. teach that the interval between the cathode and the anode is set at a predetermined length (see Figs. 4-5 and 8-9).

Regarding claims 5 and 7, Gong et al. teach that the discharging mode for said discharge is either a longitudinal or a transverse discharge (see Figs. 4-5 and 8-9 and col. 9, lines 7-22).

Regarding claim 6, Gong et al. teach that the discharging mode further comprises an oscillator (6) and an amplifier (30) (see Figs. 4-5 and 8-9).

### ***Response to Arguments***

➤ Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

➤ The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references disclose a narrow-band laser apparatus: Bäumlér et al. (US Pat. No. 4,860,300) and Furuya et al. (US Pat. No. 5,150,370).

➤ Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to José R Díaz whose telephone number is (703) 308-6078. The examiner can normally be reached on 9:00-5:00 Monday, Tuesday, Thursday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 746-3891 for After Final communications.

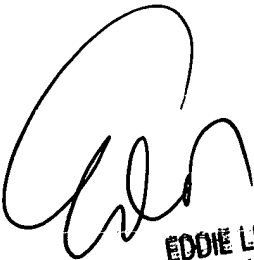
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JRD  
March 10, 2003



EDDIE LEE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800